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Reg. No.

Application of

Applicant : Mary C. Smoot et al.
Serial No. : 10/679,070
Filed : October 2, 2003
Title : METHOD FOR APPLYING AN ENCAPSULANT MATERIAL TO AN INK JET PRINthead
Docket : 2002-0124.02
Examiner : Kristal J. Feggins
Art Unit : 2861

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

RESPONSE

This paper is filed in response to the Office action dated March 29, 2004 and is accompanied by a Supplemental Information Disclosure Statement. Reconsideration of the application is respectfully requested.

Claim 13 has been objected to as being of improper dependent form and rejected under 35 U.S.C. §112, second paragraph as being indefinite based on the Office's contention that the claim fails to further limit the subject matter of the independent claim upon which it depends. Applicants respectfully submit that claim 13 is a proper dependent claim and is not indefinite. Claim 13 is a product-by-process claim, which defines a claimed product in terms of the process by which it is made. MPEP §2173.05(p) specifically indicates that product-by-process claims are acceptable and comply with 35 U.S.C. §112, second paragraph. Accordingly, applicants respectfully request that the objection and rejection of claim 13 be withdrawn. Claims 1-5, 7 -

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10, 14, 15, 17-20, 23 and 25 stand rejected as being anticipated by U.S. Pat. No. 6,113,216 to Wong. Wong discloses stencil printing of **solder paste** on a portion of an ink jet printhead wherein the underfill layer acts as an *in situ* stencil. The reference further discloses that a removable auxiliary stencil could be placed on top of the underfill layer. The *in situ* stencil described in Wong stays in place in the part. It is a sandwich-type application. By contrast, independent claim 1 of the present application is directed to a method of applying an **encapsulant material** by stencil printing the encapsulant material onto an outer portion of an ink jet print cartridge. The Office action bases the rejection of claim 1 on the premise that the stencil printed **solder alloy** in Wong anticipates the stencil printed **encapsulant material** set forth in the pending application.

Applicants respectfully submit that the disclosure of a solder alloy which is stencil printed in Wong fails to anticipate or render obvious the claims of the present application which are directed to stencil printing in an encapsulant material. One of skill in the art would immediately recognize that the solder alloys and encapsulants are distinctly different materials, serving distinctly different purposes in the art. An encapsulant material forms a barrier and is non-conductive. It is resistant to an electrical charge, to ionic contamination and is insulative. A solder alloy, by contrast, is a conductive material, which carries electrical charges from one conductive surface to another. A conductor is a substance, which offers little resistance to the flow of electrical current. Accordingly, applicants respectfully submit that independent claims 1 and 14 as well as the claims dependent thereon are patentable over the Wong reference, which fails to disclose or suggest stencil printing an encapsulant material. The purpose of a stencil printed encapsulant material is to prevent electrical connection while the purpose of the solder paste in the *in-situ* application described in Wong is to provide an electrical connection.

With respect to claims 8 and 18, the Office action indicates that Wong also discloses the use of a polymeric material as an encapsulant and cites Column 5, Lines 26-32 of the Wong patent for support of this position. However, the cited passage refers to solder paste being deposited and reflowed to form a solder ball on top of each interconnect pad. The paste is approximately 50% solder alloy and 50% flux by volume. The cited passage in Wong fails to

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support the Office's position that the reference discloses a polymeric encapsulant. The disclosure of a solder alloy in Wong fails to anticipate or render obvious the use of a polymeric encapsulant as set forth in claims 8 and 18 of the pending application. Therefore, for at least this reason as well, it is respectfully submitted that claims 8 and 18 are patentable over the references of record.

In rejecting claims 9, 10, 19 and 20, which are directed to a polymeric encapsulant material curable by actinic radiation, thermal energy or by a combination of actinic radiation and thermal energy, the Office action cites Column 5, Lines 20-25 of Wong. The cited passage refers to photo imaging of the underfill layer and fails to disclose curable encapsulant materials. The disclosure of photo imaging materials in the underfill layer for forming an *in situ* stencil provides no teaching as to the composition of the encapsulant material. One of ordinary skill in the art reading the cited passage would have no reason to utilize a photo and/or thermal curable encapsulant material in place of the solder alloy in Wong based on the disclosure in Wong of a photoimageable underfill layer. Therefore, for at least this reason as well, applicants respectfully submit that claims 9, 10, 19 and 20 are patentable over the prior art of record.

Claims 6 and 16 stand rejected as being unpatentable over the Wong reference in view of U.S. Patent No. 6,649,403 to McDevitt et al. The '403 patent discloses a system for the rapid characterization of multi-analyte fluids including a sensor array formed from a supporting member into which a plurality of cavities have been formed. The '403 patent fails to remedy the shortcomings of the Wong reference and furthermore it does not appear to be particularly pertinent to claims of the present application. Therefore, it is respectfully submitted that claims 6 and 16 are patentable over Wong in view of the '403 patent.

Claims 12, 22 and 24 stand rejected as being unpatentable over Wong. Applicants respectfully submit that claims 12, 22 and 24 are dependent upon base claims 1 and 14 and therefore are allowable for the reasons indicated above. Applicants respectfully submit that the rejection of claims 12, 22 and 24 be withdrawn.

Applicants would like to thank the examiner for the early indication of allowable subject matter with respect to claims 11 and 21. However, as indicated above, applicants respectfully

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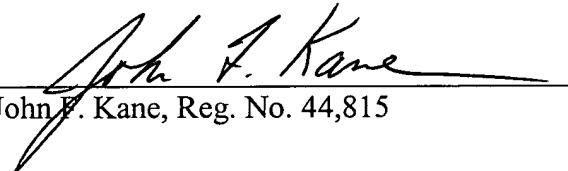
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submit that the present invention is entitled to a broader scope of protection and the claims currently pending are patentable over the prior art of record.

Applicants are submitting herewith a supplemental Information Disclosure Statement and the applicable fee in accordance with 37 C.F.R. §1.17(p). Also submitted herewith is a copy of the Information Disclosure Statement filed on October 3, 2003. Applicants received an initialed copy of the first page of the Information Disclosure Statement with the Office action, but did not receive a copy of the second page of references. Applicants request that an initialed copy of the second page be submitted in the next Office action to verify that the cited references have been considered.

In view of the above, it is respectfully submitted that the claims are in condition for allowance. Reconsideration and allowance of these claims are respectfully requested. If the examiner has any questions or comments, which can be addressed over the telephone, applicants urge the examiner to contact the undersigned attorney to address these concerns for an early disposal of this case.

Respectfully submitted,


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